

Processing Vanilla inside Madagascar

Symrise initiative seeks to preserve more of the value chain in the country of origin.

More than 140 years after Wilhelm Haarmann and Ferdinand Tiemann synthesized vanillin from pine bark, Symrise has unveiled a vanilla extraction facility in Benavony, Madagascar, which combines the company's ingredient heritage with contemporary technology and sustainability initiatives. The move establishes local vanilla processing for the first time, ensuring that more of the value chain remains within Madagascar.

The €3-million, 3,500-sq-m facility sits on 36 ha of land and features extraction, analysis, quality control and storage capacity. The site includes new percolation columns, storage and condensation tanks, and high-performance liquid chromatography. The facility will recycle the alcohol used in the rectification process. The site will also process locally grown flavor and fragrance materials such as vetiver.

The new production facility is powered in part by a boiler fueled via the burning of sustainably grown and harvested acacia wood and bamboo produced by local residents. (The boiler reportedly meets high air quality standards.) Last year, Symrise's reforestation program planted 80,000 acacia and 50,000 *Intsia bijuga* seedlings; this amount will be duplicated this year.

"This site is a further milestone in Symrise's strategy of establishing the entire value chain for vanilla in its source country and in accordance with strict sustainability criteria," said Heinz-Jürgen Bertram, CEO of Symrise, during the facility's opening ceremony, which included special guests Jules Étienne Rolland, Madagascar's minister of economy, and Harald Gehrig, the German ambassador to Madagascar. Bertram added, "With this new plant, we are completing the cycle of responsible vanilla production on-site. Our vanilla activities in Madagascar are the best evidence that business success and sustainability go hand in hand."

The State of Vanilla Production

Madagascar is by far the leading producer of Bourbon vanilla (*Vanilla planifolia*) for commercial extraction, accounting for 80% of globally processed *V. planifolia*. The plant is primarily grown in the country's northern SAVA region, so named for the districts of Sambava, Antalaha, Vohemar and Andapa.

The local industry is aided by affordable labor and significant experience in vanilla cultivation, harvesting and processing. At the same time, SAVA communities are challenged by a lack of access to clean water, deforestation, unstable crop prices, and variable supplies of rice and other key food staples. In addition to vanilla, local farmers may grow clove, coffee, acacia and subsistence crops of rice. Having sufficient sources of food and alternate means of income dissuades farmers from abandoning vanilla production in lean times or harvesting prematurely.



Heinz-Jürgen Bertram, CEO of Symrise, second from left, joined local Symrise staff and government officials for the official opening ceremony of the company's new production facility in Benavony, Madagascar.



The vanilla will also process other locally grown flavor and fragrance materials such as vetiver.



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The site, in remote Benavony, ensures that more of the value chain remains within Madagascar.



Cured vanilla beans are sorted by hand into gourmet (black) and extraction (red) qualities. This assessment is conducted wholly by sight, smell and touch, without the benefit of instrumental analysis. Sorters represent a multigenerational selection of locals who have a strong heritage in vanilla.



Vanilla beans are loaded into baskets that are submerged in 62°–68°C water for about 2 minutes (short beans are exposed for 1–1.5 minutes); this “killing” stage stimulates the enzymatic processes that will create characteristic vanilla aromas.



Green and cured beans in baskets at Symrise's vanilla fermentation and storage complex in Antalaha.

In Madagascar, vanilla plants flower in the fall, roughly September-October, while beans are harvested about nine months later, in June-July. Depending on growing conditions, 1 ha can produce 20–200 kilos of green beans. Symrise purchases about 10% of all Madagascan vanilla beans produced each year. Generally, these beans are then cured in July-August and conditioned in August-September.

Slow-curing Vanilla the Traditional Way

The proper and patient ageing of vanilla beans is key to achieving ideal yields and sensory traits, according to Symrise.



Bertram attended the opening of a primary school, which was made possible in part by the sustainability efforts of the company.

While climatic, market, cultivation and disease factors can affect yields and qualities, the traditional curing process hasn't changed much over the years. A recent visit to Symrise's vanilla fermentation and storage complex in Antalaha, which opened in early 2014, afforded a look inside this unique piece of vanilla heritage.

Some vanilla curing is undertaken by local farmers themselves; however, the process is highly labor-intensive and technical, and may expose farmers to a heightened risk of theft. As a result, Symrise undertakes the vast majority of this work itself, producing what the company considers the ideal product. At the Antalaha site, which employs about 200 workers, beans are sorted and loaded into baskets that are submerged in 62°–68°C water for about 2 minutes (short beans are exposed for 1–1.5 minutes). This “killing” stage stimulates the enzymatic processes that will create characteristic vanilla aromas.

Next, steaming beans are placed in fabric-covered boxes for about two days, a process called “sweating.” The rate of heat/steam loss is monitored by local workers to ensure quality of the beans.

Following sweating, the beans are sun-dried on sheets (10 kilos of beans/1 sheet) to prevent fermentation and develop aromas; again, this is calibrated by local experts. (Heavy rains in July can make sun-drying a significant challenge.)

A stage of shade drying on racks indoors can last 15 days to three months, a time span determined by texture and aroma. This drying stage offers a slower loss of moisture compared to sun-drying, and supports additional aromatic development.

Finally, beans are sorted by hand into gourmet (black) and extraction (red) qualities. This assessment is conducted wholly by sight, smell and touch, without the benefit of instrumental analysis. Sorters represent a multigenerational selection of locals—a mix of permanent and seasonal workers—who have a strong heritage in vanilla. They categorize beans by color, moisture/texture, length and structural integrity (split or not split). Appearance is crucial for the gourmet market. Beans slated for extraction have a moisture range of 18–20%; E.U. red extract is 25–30% moisture. Split beans tend to be moistest. Symrise staff has explained that the drying and sorting stages are the most labor-intensive aspects of vanilla production. In general, the longer the process is allowed to take, the better the quality of the cured vanilla beans. As a result, the highest-quality beans are sorted and bundled last.

Partnership-driven Projects

Improving the livelihoods of Madagascar's vanilla farmers has been the core mission of a partnership among Symrise; its client, Unilever; and GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), a German government-owned organization in part focused on supporting sustainable initiatives. The partnership encompasses approximately 90 villages and impacts about 30,000 Malagasy citizens, including 7,000 vanilla farmers, by providing access to secondary education, fair crop pricing, training in agricultural best practices, equal opportunities for women and improvements to road infrastructure.

There are three types of farms operating in the region: those run primarily by hired labor, those operated by a combination of family members and hired labor, and family run farms. An average family farm consists of six family members, according to Symrise. About one quarter are managed by women. The key cash crops are vanilla and coffee. These crops are often grown on steep slopes, which are vulnerable to erosion due to slash-and-burn farming practices. Plantings of acacia trees can help stabilize the soil.

As a formulator of flavors and fragrances, as well as a producer of flavor and fragrance ingredients, Symrise has a vested interest in vanilla. Meanwhile, Unilever brands such as Magnum, Breyers and Carte D'Or rely on the product for key sensory facets. The

partnership draws on Unilever's experience with smallholder engagement, Symrise's background in sustainable sourcing (onions, lavender, shea butter, etc.) and GIZ's strengths in sustainable development.

By combining the strengths of sustainable development, industry innovation and local expertise, Symrise's latest expansion into vanilla has secured supply and quality for its future.

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